

इंटरनेट

मानक

### Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

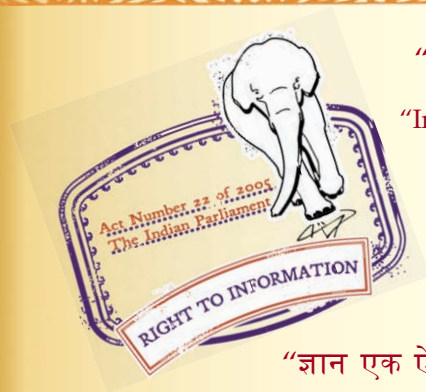
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 11183 (1984): Portable Pneumatic Rammers [PGD 8:  
Pneumatic Tools]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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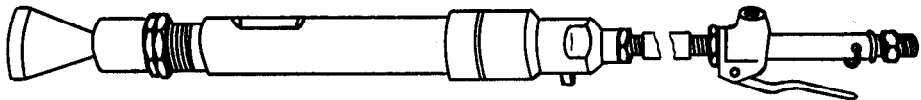




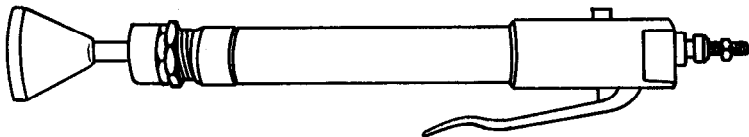
Indian Standard

SPECIFICATION FOR  
PORTABLE PNEUMATIC RAMMERS

1. **Scope** — Covers requirements for portable pneumatic rammers weighing up to 12.5 kg.
2. **Type**
- 2.1 *Type F* — Floor type rammers.



- 2.2 *Type B* — Bench type rammers.



3. **Terminology**

- 3.1 *Portable Pneumatic Rammer* — A pneumatic tool having a reciprocating piston extended to carry a butt or pein which is used for beating down sand, soil or equivalent material; and designed to be held in operator's hand during working.
- 3.2 *Gauge Pressure* — Steady pressure of compressed air measured within 3 metres from inlet of the rammer.
- 3.3 *Air Consumption* — Volume of air corrected to standard atmospheric conditions of temperature and pressure according to IS : 196-1966 'Atmospheric conditions for testing (*revised*)' consumed by rammer during test without fluctuation of pressure during test.

4. **Mass of Rammer**

Type	Mass, kg <i>Max</i>
B	4.5
F	12.5

5. **General Requirements**

- 5.1 *Lubrication* — Parts which require lubrication shall be properly enclosed so as to prevent entry of foreign particles and leakage of lubricant.
- 5.2 *Air Inlet Connection* — Air inlet connection for pneumatic rammers shall have pipe thread designation Rc 1/2 conforming to IS : 554-1975 'Dimensions for pipe threads where pressure tight joints are required on the threads (*second revision*)'.
- 5.3 *Handles* — The rammers shall have straight handles. The handle and cylinder band shall be locked together in such a manner that they will not become loose in service.
- 5.4 *Throttle* — The rammer shall be provided with a lever type throttling mechanism for admitting and shutting off the supply of air. Provision may be made for locking the throttle while rammers are in operation.

## 5.5 Piston and Piston Rod Assembly

5.5.1 The piston and piston rod shall be either integral or be firmly secured to each other by proper fit.

5.5.2 Piston rod shall have minimum hardness of 600 HV to ensure proper service and long life. Piston rod is further recommended to be given hard-chrome or equivalent plating to avoid wear due to abrasion.

5.5.3 Gland packings shall be provided for the piston rod to prevent any soil, sand, etc, entering into the cylinder and also to prevent air leakage from cylinder.

5.6 Each tool shall be supplied with an instruction manual. Data to be supplied in the manual shall be in accordance with Indian Standard Technical supply conditions for pneumatic tools (*under preparation*).

6. **Workmanship and Finish** — The rammers shall be free from harmful flaws, cracks, burrs and other imperfections and shall be finished satisfactorily.

7. **Designation** — A portable bench type rammer; (Type B) shall be designated as:

Rammer B IS : 11183

A portable floor type rammer (Type F) shall be designated as:

Rammer F IS : 11183

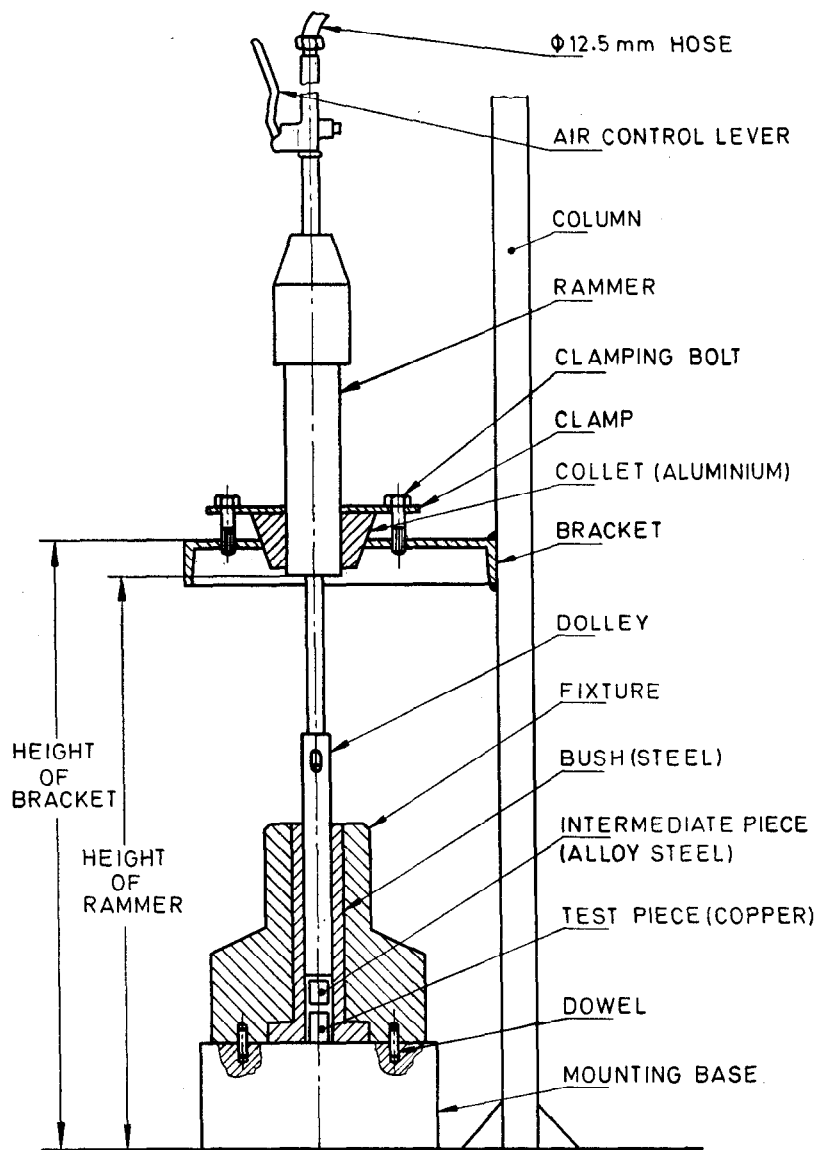


FIG. 1 TEST RIG FOR PELLET TEST

## 8. Tests

**8.1 Pellet Test** — Initially place the rammer in the test rig as given in Fig. 1 and operate it without keeping the pellet in the rig for two minutes. Finally, the rammer shall be operated in test rig for a specified period to beat down a cylindrical pellet of the dimensions given in Table 1 and of the material specified in 8.1.1. The compression of the pellet shall be measured and the same shall be within  $\pm 5$  percent of the declared values of the manufacturers.

**8.1.1** Material for the pellet shall be annealed copper. It shall have hardness between 48-62 HV.

TABLE 1 DIMENSIONS OF PELLETS AND TEST DURATION

Type of Rammers	Pellet		Test Duration  S
	Diameter, mm $\pm 0.1$	Length, mm $\pm 0.1$	
B	9.5	9	10
F	28.5	25.4	15

**8.2 Air Consumption Test** — Water displacement meter or any other equally suitable instrument shall be used to determine the quantity of air consumed per minute at  $6.0 \pm 0.5$  bar pressure measured at a distance of not more than three metres from the inlet of the tool while the pellet test is being conducted as described in 8.1. The air consumption reading shall be corrected to standard atmospheric conditions of temperature and pressure conforming to IS : 196-1966. The air consumption shall be within  $\pm 5$  percent of the values declared by the manufacturer.

**8.2.1 Measurement of pressure** — For measurement of air pressure, gauges of any suitable type shall be used. The pressures to be read shall fall between one-fourth and three-fourths of full scale reading. The pressure gauges shall be located within three metres from the rammer. The pressure shall remain constant within  $6 \pm 0.5$  bars during testing.

**8.3 Operation Test** — Each rammer shall be tested for easy starting and stopping. During testing there shall be no abnormal noise or excessive temperature rise. Also the rammer shall show no flaws which may have been developed during testing.

## 8.4 Endurance Test

**8.4.1 For type approval** — Each sample conforming to pellet test shall be run in the test rig to disseminate energy for 100 h in the manufacturers test room (100 h run need not be at a stretch and may be done over a period), after which the tool shall be dismantled and all the parts shall be examined. No part shall either break during testing or shall be found broken, cracked or deformed on examination.

**8.4.2 For routine testing** — One percent, the minimum being one, of the tools on order, if the order is for 50 pieces or more, shall be run for the test rig to disseminate energy in the manufacturers' test room for 15 h (15 h run need not be at a stretch and may be done over a period), after which the tools shall be dismantled and all parts shall be examined. No part shall either break during testing or be found broken, cracked or deformed on examination.

**9. Marking** — The rammer shall be marked with type, maximum working pressure and manufacturer's name or trade-mark at a suitable place so that in the course of normal use the markings shall not get damaged. They may also be marked with serial number and the year of manufacture.

**9.1 ISI Certification Marking** — Details available with the Indian Standards Institution.

**10. Packing and Packaging** — Before packing, the inlet, exhaust and other openings of each tool shall be adequately protected/covered against entry of dust and other harmful material. Packing shall be done in accordance with Indian Standard Technical supply conditions for pneumatic tools (*under preparation*).

### **EXPLANATORY NOTE**

Rammers are used in the foundry for ramming the foundry sand. Bench type rammers have short overall length and are suitable for bench moulding work whereas floor type rammers have long overall length and are suitable for floor moulding work.

While preparing this specification, considerable assistance has been taken from the details supplied by the manufacturers of the product.